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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
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09/526,602 03/16/00 SUDA

Y 54490-Z/JPW/

EXAMINER

IM22/0425

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ART UNIT

PAPER NUMBER

1753

DATE MAILED:

04/25/01

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

Office Action Summary

Application No.
09/526,602

Applicant(s)
Suda et al.

Examiner
Christopher RoDee

Art Unit
1753



-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE three MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) ☒ Responsive to communication(s) filed on 12 Mar 2001

2a) ☒ This action is FINAL. 2b) ☐ This action is non-final.

3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

Disposition of Claims

4) ☒ Claim(s) 21-27 is/are pending in the application.

4a) Of the above, claim(s) _____ is/are withdrawn from consideration.

5) ☐ Claim(s) _____ is/are allowed.

6) ☒ Claim(s) 21-27 is/are rejected.

7) ☐ Claim(s) _____ is/are objected to.

8) ☐ Claims _____ are subject to restriction and/or election requirement.

Application Papers

9) ☐ The specification is objected to by the Examiner.

10) ☐ The drawing(s) filed on _____ is/are objected to by the Examiner.

11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved.

12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119

13) ☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).

a) ☐ All b) ☐ Some* c) ☐ None of:

1. ☐ Certified copies of the priority documents have been received.

2. ☐ Certified copies of the priority documents have been received in Application No. _____

3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

*See the attached detailed Office action for a list of the certified copies not received.

14) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

Attachment(s)

15) ☒ Notice of References Cited (PTO-892)

18) ☐ Interview Summary (PTO-413) Paper No(s). _____

16) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

19) ☐ Notice of Informal Patent Application (PTO-152)

17) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s). _____

20) ☐ Other:

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DETAILED ACTION

Claim Rejections - 35 USC § 112

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claims 21-27 are rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

In response to the rejections under this section as applied in the last Office action applicants have presented new claims. Claim 21 is the sole independent claim and claims 22 through 27 are all dependent on claim 21.

New claim 21 recites a method of manufacturing a liquid toner composition for electrophotography. The first step, as it is understood, includes a step of heating a thermoplastic resin within a solvent having certain properties to dissolve and mix the resin with the solvent. The specification as filed does not disclose heating as dissolving and mixing the thermoplastic resin in the solvent (see spec. p. 3, l. 14-15). The specification does disclose a first "step" as having multiple parts: heating, dissolving, mixing, and dispersing the resin in the solvent. The examples show "dispersing" and "mixing" as being accomplished with a stirrer (e.g., spec. p. 14, l. 18). The claims are not described by the specification because heating is not disclosed as dispersing or mixing the components. The Examiner suggests that the claims

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be amended to require the necessary steps of dispersing, mixing, and heating to dissolve the components.

The Examiner notes that the claims have been broadened because they no longer require addition of the inorganic particles "immediately" before particle precipitation. This change is described by the specification.

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 21-27 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 21 is indefinite because it is unclear if the heating is accomplishing the mixing recited in the passage "to dissolve and mix with the solvent". See the remarks above in the § 112, first paragraph, rejection.

Claim 22 is indefinite because it recites a genus of components (e.g., metal soaps) and then provides examples of specific compounds within the genus (e.g., manganese naphthenate) using "such as" language. The "such as" language is indefinite because it is unclear if the specific compounds are limiting the claim or if the broader genus is limiting the claim. See MPEP 2173.05(d). The "such as" language is used repeatedly in the claim and is improper and indefinite at each occurrence. The Examiner suggests that each genus be removed from the

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claim along with the "such as" language and that only the specific compounds be recited. The punctuation should be consistent between each species.

Claim 23 is indefinite because it is unclear if the dispersant is excluded from being present in an amount of 0.5 to 50% by weight. This issue can be resolved by changing "substances" to "antistat" in both claims 22 and 23 and deleting "excluding the dispersant" from claim 23.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 21-24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hou in US Patent 5,358,822.

Hou discloses a process of making a liquid toner. In the process of Example 2 a thermoplastic polymer (see patent claim 1) and a pigment (e.g., carbon black - an inorganic pigment) are placed in a solvent that is a good solvent for the polymer at high temperatures and a poor solvent at lower temperatures. The polymer and pigment are heated to a temperature where the polymer is dissolved and then cooled so the polymer precipitates with the pigment. The precipitated polymer particles are removed from the solvent and then redispersed in

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ISOPAR and mixed with cupric naphthenate along with a steric stabilizer (apparently a dispersant). The reference states that either organic or inorganic colorants may be used in the process. The colorants, such as a pigment, are either embedded in the particle or are attached to the surface of the particle (col. 7, l. 5-22). Although the reference does not mention the solubility parameter of the solvent, it is apparent from the disclosure and would be understood by the artisan that the solubility parameter is chosen so that the polymer will dissolve out of the solvent and form either a coating on the pigment or a particle with the pigment embedded. The artisan would understand that the solubility parameter would control the size of the particle or thickness of the polymer coating on the pigment.

The reference does not state that the polymer is substantially insoluble in the solvent at room temperature. It would have been obvious to one having ordinary skill in the art at the time the invention was made to choose a combination of polymer and solvent so that cooling (i.e., precipitation temperature) can be performed to room temperature rather than 0°C as performed in Example 2 of Hou. This would have been advantageous because cooling to room temperature would require less time and less energy (e.g., an ice bath would not be required). Thus, the artisan would have found it obvious to choose a polymer for the toner of Hou where the solubility temperature is at room temperature for a given solvent to reduce time and expense of toner preparation. The artisan would have been expected to optimize the amounts of the dispersant and naphthenate compound in Hou within the disclosure of the reference in order to obtain optimum characteristics of the toner composition.

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Claims 25-27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hou in US Patent 5,358,822 as applied to claims 21-24 above, and further in view of Sato *et al.* in US Patent 3,808,026.

Hou was described above. The reference does not disclose silica and titanium oxide as a component of the toner. Sato discloses silica and titanium oxide as a white pigment in a liquid toner (col. 4, l. 50-60). These pigments are effective for forming an image that is non-contrasting with the image background (col. 2, l. 54 - col. 3, l. 21).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to use silica or titanium oxide as the pigment in the liquid toner of Hou because a white pigment in the toner allows for development of the image background (i.e., surface of the paper - col. 3, l. 9-13). Development of the background area on the photoreceptors permits neutralization of background charges and allows clear images to be formed. It appears that silica would have hydroxide groups attached to its surface because silica is a hydrophilic substance. What absorbed on the silica surface would give hydroxide groups.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after

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the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication should be directed to Exr. Christopher RoDee at telephone number 703 308-2465 or via the receptionist at 703 308-0661 for general or status inquiries. Submissions by fax may be accepted at the following telephone numbers:

Official fax: 703 872-9310
After Final fax: 703 872-9311
Unofficial fax: 703 305-6078


CHRISTOPHER RODEE
PRIMARY EXAMINER

cdr
20 April 2001